

CLAIMS:

1. A process for the separation and/or isolation of plasma proteins, especially human plasma proteins, from a mixture containing plasma proteins, wherein
- said mixture is applied to a separation medium having an annular design and having a layer of application medium applied thereon;
  - said separation medium having the annular design is rotated essentially vertically about an axis which is defined in the direction of flow of the mixture through the separation medium having the annular design;
  - an eluent is passed through the separation medium having the annular design; and
  - fractions exiting at the end of the separation medium having the annular design are collected.
2. The process according to claim 1, characterized in that said application medium comprises spherical particles.
3. The process according to claim 1 or 2, characterized in that said application medium has a treated surface which prevents non-specific interactions with components to be separated from the mixture.
4. The process according to claims 1 to 3, wherein said mixture is blood plasma or mixtures containing virus-inactivated plasma proteins.

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5. The process according to claims 1 to 4, characterized in that said mixture contains at least two plasma proteins to be separated.
6. The process according to claims 1 to 5, wherein said separation medium having the annular design is used for ion-exchange, gel permeation, molecular size exclusion or affinity chromatography or chromatography based on hydrophobic interactions.
7. The process according to at least one of claims 1 to 6, wherein said plasma proteins are inter- $\alpha$ -trypsin inhibitor,  $\alpha_1$ -antitrypsin, anti-thrombin III, immune globulins, such as IgG, human serum albumin or glycoproteins, preferably from the clotting cascade, or vitamin K dependent blood clotting factors.
8. The process according to at least one of claims 1 to 6, characterized in that said plasma proteins are selected from blood clotting factors VIII, IX, and thrombin.
9. The process according to any of claims 1 to 8, characterized in that the functions of mixing, of separating the plasma proteins and of the fractioning are performed continuously.
10. The process according to any of claims 1 to 9, characterized in that the separation medium is continuously regenerated and equilibrated, simultaneously with the separation of the plasma proteins.
11. The process according to any of claims 1 to 10, characterized in that when a material for adsorption chromatography is used as the separation medium, at least two different eluents are simultaneously passed through said separation medium having the annular design.

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12. The process according to any of claims 1 to 11, characterized in that at least two different separation media are employed in layers.
13. The process according to any of claims 1 to 12, characterized in that a polymeric block material is employed as said separation medium.
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